

**TRANSMITTAL OF APPEAL BRIEF**Docket No.  
FLH-11102/29

In re Application of: Mark Falahee

Application No.  
10/805,900-Conf. #1949Filing Date  
March 22, 2004Examiner  
M. C. HoffmanGroup Art Unit  
3733

Invention: POSTERIOR SPINAL RECONSTRUCTION SYSTEM

**TO THE COMMISSIONER OF PATENTS:**

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filed: July 9, 2008 .

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Dated: September 9, 2008

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BOARD OF PATENT APPEALS AND INTERFERENCES**

In re application of: Falahee

Conf. No.: 1949

Serial No.: 10/805,900

Group No.: 3733

Filed: March 22, 2004

Examiner: Mary Hoffman

For: POSTERIOR SPINAL RECONSTRUCTION SYSTEM

**APPELLANT'S APPEAL BRIEF UNDER 37 CFR §41.37**

Mail Stop APPEAL BRIEF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

**I. Real Party in Interest**

The real party in interest in this case is Medical Designs, LLC, by assignment.

**II. Related Appeals and Interferences**

There are no appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**III. Status of Claims**

The present application was filed with 2 claims. Claims 3-15 were added by amendment in September 2006. Claim 9 was canceled by amended in January 2008. Claims 8 and 13 have been deemed allowable by the Examiner in the April 9, 2008 final Office Action. Claims 1-8 and 10-15 are pending; however, claims 1-7, 10-12 and 14-15 are rejected and under appeal. Claims 1 and 11 are the independent claims.

**IV. Status of Amendments Filed**

No after-final amendments have been filed.

## **V. Summary of Claimed Subject Matter**

Independent claim 1 resides in apparatus for spinal reconstruction. Such apparatus comprises a superior facet complex 102 including a plate having an upper portion, a lower portion, and a vertical midline. (Figure 1). The upper portion is adapted for fixation to an upper vertebral body 110. A pair of inferior gliding arms 104, 106 extends downwardly from the lower portion of the plate on respective sides of the midline, each gliding arm having a longitudinal axis that extends away from the midline at an angle, an upper end with a first coupling to the superior facet complex, and a lower end with a second coupling to a lower vertebral body. At least the first coupling provides a limited degree of axial movement of each gliding arm to facilitate flexion, extension, and lateral bending. (Specification, page 3, line 12-28).

Independent claim 11 resides in an apparatus for spinal reconstruction apparatus, comprising a superior facet complex 102 including a plate having an upper portion, a lower portion, and a vertical midline. (Figure 1) The upper portion is adapted for fixation to an upper vertebral body using pedicle screws 1200. A pair of inferior gliding arms 104, 106 extends downwardly from the lower portion of the plate on respective sides of the midline at outward angles. Each gliding arm has a longitudinal axis, an upper end with a first coupling to the superior facet complex, and a lower end with a second coupling to a lower vertebral body using pedicle screws. (Figure 1) Both the first and second couplings providing a limited degree of axial movement of each gliding arm to facilitate flexion, extension, and lateral bending. (Specification, page 3, line 12-28; page 4, line 12 to page 5, line 4).

## **VI. Grounds of Rejections To Be Reviewed on Appeal**

A. The rejection of claims 1-7, 9<sup>1</sup>-10 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 3,426,364 to Lumb.

B. The rejection of claims 11-12 and 14-15 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 3,426,364 to Lumb.

## **VII. Argument**

A. Claims 1-7 and 10.

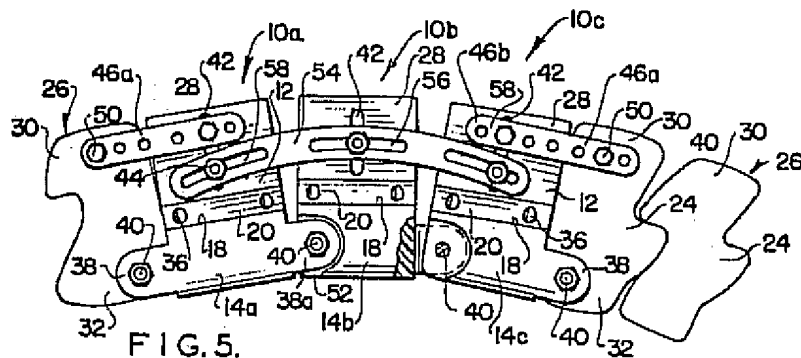
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<sup>1</sup> Claim 9 was canceled by Applicant in the amendment filed January 2, 2008.

All of the claims of this application stand rejected under 35 U.S.C. §102(b) over U.S. Patent No. 3,426,364 to Lumb. By way of introduction, Lumb resides in an “appliance” in “the form of an artificial vertebra” used to bridge the gap of removing vertebra(e) (Lumb; 1:10-16). By contrast, Appellant discloses a device to replace only the posterior elements of the vertebrae. Appellant’s device does not, in any way, function to replace vertebral bodies, or the “centrum” as Lumb describes it (1:38).

Appellant’s claim 1 includes, among other limitations, “a pair of inferior gliding arms extending downwardly from the lower portion of the plate on respective sides of the midline, each gliding arm having a longitudinal axis that extends away from the midline at an angle...” The Examiner argues that the arches 54 of Lumb meet the limitation of “a pair of inferior gliding arms (ref. #54) extending downwardly from the lower portion of the plate on respective sides of the midline (Final OA, middle of page 2) This interpretation is inconsistent with teachings of the reference.

Figure 5 of Lumb has been reproduced below to show the Board the “arches” 45 of Lumb. These are the curved, slotted pieces, one on either side of the assembly.



In the Final OA, the Examiner has drawn a “vertical midline,” but Appellant cannot determine to what the Examiner is referring. The “vertical midline,” according to Appellant—and Lumb—can only reasonably be defined as a line passing longitudinally down through the apparatus; that is, the longitudinal axis, as described by Lumb with respect to the longitudinal section shown in Fig 9 of Lumb and also reproduced below:

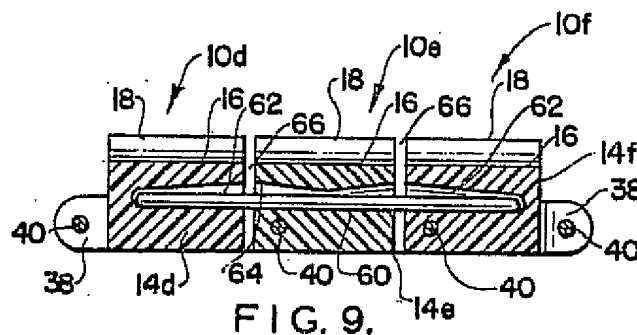


FIG. 9.

As discussed in Lumb, the appliance facilitates “pivot movement about a longitudinal axis” (Lumb 2: 45-46; 6: 26-27). Thus, the vertical and longitudinal axis of Lumb—and that referred to by Appellant—are the same, and are identical to the vertical or longitudinal axis of the human spinal column. Lumb’s vertical midline is accordingly through the center of the apparatus, running longitudinally. The arches 54 are therefore uniplanar, located longitudinally along the “stem” part of the “fixed” Y component, arching anteriorly from midline, not diverting laterally from midline. While the with slots (i.e., 56, 58) allow for a sliding or pivoting motion, from a neutral position to forward flexion, but only in one plane due to the inherent mechanical restraints.

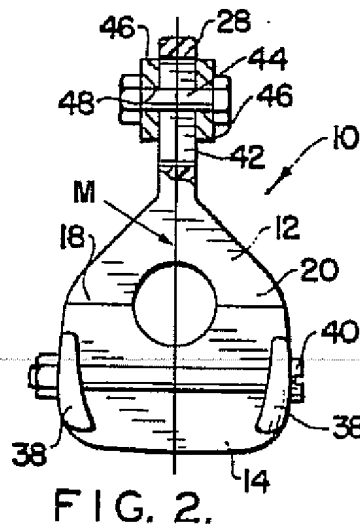
In summary, the Examiner’s statement on page 3 of the Final OA that “[e]ach gliding arm [54 of Lumb] extends downwardly and away from the midline at an angle” is without support. According to Lumb, the two “arches 54 are fastened at their mid-points through elongate central slot 56 to slot 42 in the stem 28 of the middle unit 10b in the same manner as brace 46 in FIGURE 1.” (‘364 patent, 4:50-55).

Even if the Examiner means that an angle can be defined as having a value of zero, Appellant’s claim language—and specification—make it abundantly clear that the angles are non-zero. Claim 1 recites “arms that] extend away from the midline at an angle,” and claim 11 sets forth “arms extending downwardly from the lower portion of the plate on respective sides of the midline at outward angles.” Such language could never be interpreted as zero degrees.

Claim 1 further includes the limitation of “at least the first coupling providing a limited degree of axial movement of each gliding arm to facilitate flexion, extension, and lateral bending.” The Examiner states that the “coupling” (attachment to the upside down Y stem) allows for “a limited degree of axial movement for each gliding arm to facilitate flexion, extension, and lateral bending” (Final OA, bottom pf page 2, top of page 3). However, these “couplings” are described by Lumb as screws with fasteners (3: 49 and 4: 56-58) that can be loosened or tightened thus securing

the gliding arms to the stem, preventing or allowing forward motion from neutral. There is no other allowable motion in any other plane and certainly no lateral bend or extension, (as defined as movement opposite from flexion from a neutral starting point).

Figure 2 of Lumb is reproduced below. Applicant has added a midline, "M." The braces 46—and the braces 54—are clearly parallel to one another. They do not "extend downwardly and away from the midline at an angle." The structure of Lumb does not, and cannot, accommodate lateral bending.



B. Claims 11-12 and 14-15.

In addition to the arguments above in relation to claim 1, claim 11 includes the limitation of pedicle screw fixation. In fact, the Lumb structure uses no pedicle screws at all. The Examiner states: "The upper portion of the plate utilizes pedicle fixation" (Final OA, middle of page 3) There is no indication as to what the Examiner is referencing. Lumb teaches "gliding arms" as discussed above, and "ears" (38) for limited pivotal movement about screw pivot (40). If the Examiner means the gliding arm attachment...there are no anatomical possibilities of a pedicle fixation into a spinous process. If the Examiner is referring to the pivot points for the "ears" the screws are into the sides of the anterior aspect of the centrum or V.B. and again not anatomically in any way a pedicle screw fixation.

Claims 8 and 13

Claims 8 and 13 have been deemed as allowable subject matter in the final Office Action. Appellant will incorporate the limitations of claim 8 into claim 1 and claim 13 into claim 11 following the outcome of this Appeal.

Conclusion

In conclusion, for the arguments of record and the reasons set forth above, all pending claims of the subject patent application continue to be in condition for allowance and Appellant seeks the Board's concurrent at this time.

Respectfully submitted,

By: \_\_\_\_\_

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**APPENDIX A****CLAIMS ON APPEAL**

1. Spinal reconstruction apparatus, comprising:  
a superior facet complex including a plate having an upper portion, a lower portion, and a vertical midline, with the upper portion being adapted for fixation to an upper vertebral body;  
a pair of inferior gliding arms extending downwardly from the lower portion of the plate on respective sides of the midline, each gliding arm having a longitudinal axis that extends away from the midline at an angle, an upper end with a first coupling to the superior facet complex, and a lower end with a second coupling to a lower vertebral body;  
at least the first coupling providing a limited degree of axial movement of each gliding arm to facilitate flexion, extension, and lateral bending.
2. The spinal reconstruction apparatus of claim 1, wherein the upper portion of the plate utilizes pedicle fixation.
3. The spinal reconstruction apparatus of claim 1, wherein the lower end of each gliding arm utilizes pedicle fixation.
4. The spinal reconstruction apparatus of claim 1, wherein the first coupling includes a slot on the plate and a pin on the gliding arm that slides along the slot.
5. The spinal reconstruction apparatus of claim 1, wherein the second coupling provides a limited degree of axial movement of each gliding arm.
6. The spinal reconstruction apparatus of claim 1, wherein the second coupling includes a slot on the gliding arm and a pedicle screw with a pin or ball that engages with the slot.
7. The spinal reconstruction apparatus of claim 1, wherein the first coupling provides a limited degree of pivoting from side to side.



10. The spinal reconstruction apparatus of claim 1, wherein the superior facet complex further includes an outer surface with soft tissue attachment points.

11. Spinal reconstruction apparatus, comprising:

a superior facet complex including a plate having an upper portion, a lower portion, and a vertical midline, the upper portion being adapted for fixation to an upper vertebral body using pedicle screws;

a pair of inferior gliding arms extending downwardly from the lower portion of the plate on respective sides of the midline at outward angles, each gliding arm having a longitudinal axis, an upper end with a first coupling to the superior facet complex, and a lower end with a second coupling to a lower vertebral body using pedicle screws;

both the first and second couplings providing a limited degree of axial movement of each gliding arm to facilitate flexion, extension, and lateral bending.

12. The spinal reconstruction apparatus of claim 11, wherein the first coupling further provides a limited degree of pivoting from side to side.

14. The spinal reconstruction apparatus of claim 11, wherein the superior facet complex further includes an outer surface with soft tissue attachment points.

15. The spinal reconstruction apparatus of claim 11, further including:

an upper superior facet complex and a lower superior facet complex, both with gliding arms;  
and

wherein the lower ends of the gliding arms associated with the upper superior facet complex attach to the upper portion of the lower superior facet complex using pedicle screws,

thereby facilitating a limited degree of flexion, extension, and lateral bending across multiple spinal levels.

**APPENDIX B**

**EVIDENCE**

None.

**APPENDIX C**

**RELATED PROCEEDINGS**

None.